



Home > Statistics > Detailed methodology information > Concepts, sources and methods  
› Labour Statistics: Concepts, Sources and Methods > 2023 > Methods: Four pillars of labour statistics  
› Australian Labour Account > Hours quadrant

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# Hours quadrant

## Labour Statistics: Concepts, Sources and Methods

Reference period: 2023

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### Sections

- ▼ [Labour Statistics: Concepts, Sources and Methods, 2023](#)
  - [Overview](#)
  - ▶ [Concepts and sources](#)
  - ▼ [Methods: Four pillars of labour statistics](#)
    - ▶ [Household surveys](#)
    - [Business surveys](#)
    - ▶ [Administrative data](#)
    - ▼ [Australian Labour Account](#)
      - [Jobs quadrant](#)
      - [People quadrant](#)
      - [Hours quadrant](#)

### On this page

- [Hours concepts](#)
- [Hours sources](#)
- [Hours methods](#)
- [Hours quadrant calculations](#)

[Payments quadrant](#)

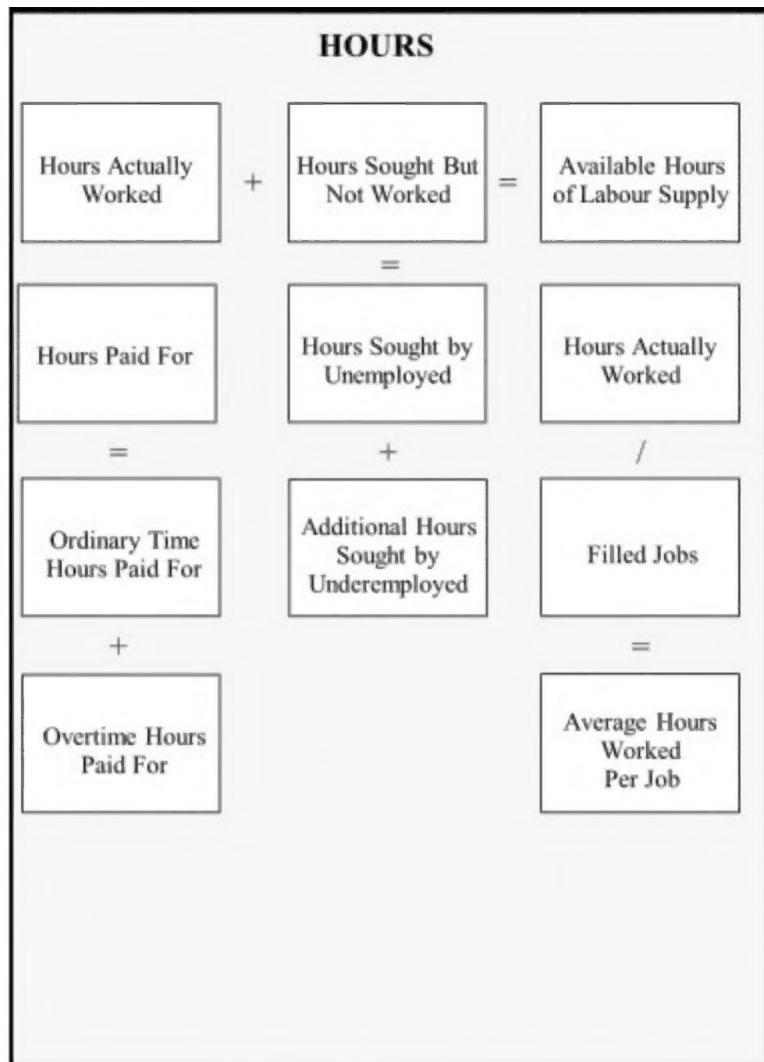
[Glossary](#)

## [Acronyms](#)

[Close](#)

The Hours (labour volume) quadrant describes the relationship between the hours of labour that are supplied by individuals, and the hours of labour that are used or demanded by businesses. These data have a direct link to the Australian National Accounts and productivity statistics.

### Hours quadrant



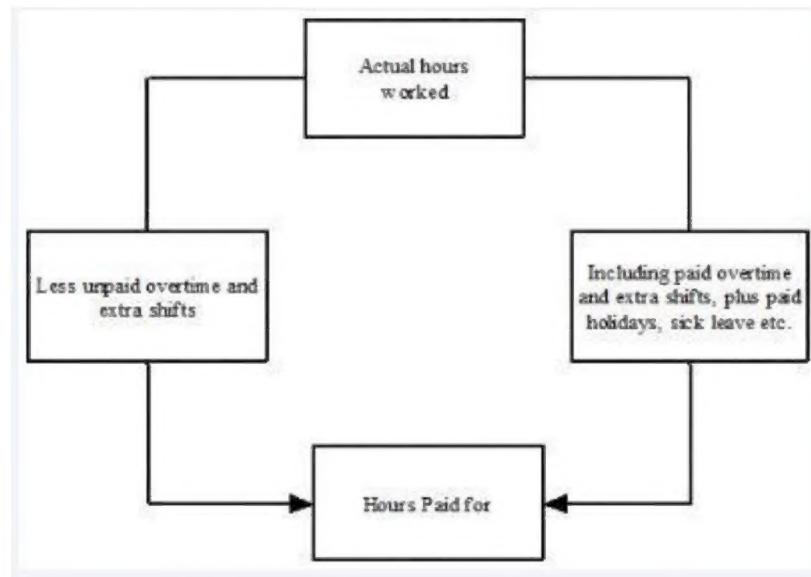
### Hours concepts

Labour volume is expressed as hours worked, and has been defined in International Labour Organisation (ILO) conventions in terms of the time when (paid) employees are at the disposal of an employer; that is, when employees are available to receive work orders from an employer or person in authority, with hours worked covering all jobs. During such

periods of availability, workers are expected to be ready to work if work is possible, requested or necessary. This general concept is made meaningful for the self-employed if it is taken to mean time when the self-employed are available to do their work, such as being at the disposal of clients, ready to receive purchase orders or available to make sales, etc. Further information is available in the ILO resolution concerning the measurement of working time (Eighteenth International Conference of Labour Statisticians, 2008).

The Labour Account produces estimates of two of the measures of earnings: hours actually worked; and Hours paid for. For information on the underlying concepts of hours worked, including the various measures of hours worked, see the [Hours of work \(/statistics/detailed-methodology-information/concepts-sources-methods/labour-statistics-concepts-sources-and-methods/2023/concepts-and-sources/hours-work\)](#) chapter.

## Actual hours worked and hours paid for



## Hours sources

The number of hours actually worked is sourced from the Labour Force Survey. An adjustment is made in the Labour Account to account for hours worked by people who are out of scope of the LFS, namely:

- defence force personnel (who are out-of-scope of the LFS)
- child workers
- non-residents living in Australia employed by Australian companies, and
- Australian residents living in Australia but employed by overseas companies.

The number of hours sought by unemployed people, and the hours preferred of

underemployed people, is sourced from the Labour Force Survey Detailed from 2014 onwards. For earlier periods, a derived average number of hours sought per unemployed person is applied to the relevant number of unemployed people. A similar method is applied to derive the number of additional hours preferred by underemployed people.

Average weekly ordinary and overtime hours paid for by all employees are sourced from the two-yearly Survey of Employee Earnings and Hours (EEH).

The table below summarises data sources used in compiling quarterly estimates in the hours quadrant.

Source data	Use in compiling quarterly data
Survey of Employee Earnings and Hours	Used to estimate hours paid for.
Labour Force Survey	Used to estimate hours actually worked, hours sought by unemployed people and additional hours preferred by underemployed people.
Linked Employer Employee Dataset	Used to determine the industry proportions of hours actually worked in secondary jobs.
Department of Defence	Used to estimate hours actually worked by permanent defence personnel.
Child Employment Survey	Used to estimate the base number of hours worked by children under 15 years in 2006.
Participation, Jobs Search and Mobility and Labour Mobility, Australia	Used to convert estimates of hours worked by children under 15 years at any point over the year to an end of quarter.
Migration, Australia and Overseas Arrivals and Departures, Australia	Used to estimate hours worked by non-resident students, sponsored visa holders, New Zealand citizens and other non-residents in Australia.
Survey of Education and Work	Used to estimate hours worked by recent migrants in Australia.
Balance of Payments	Used to estimate hours worked by Australian residents living in Australia but employed by overseas companies/business entities.

## Hours methods

### Hours actually worked

Hours actually worked are collected in the Labour Force Survey. Respondents report the hours worked in their main job and the hours worked in all their jobs in the survey reference week. Estimates of hours actually worked during the reference week are used to estimate total hours worked by industry of main jobs across a quarter which are published, by market/non-market sector, in Labour Force, Australia.

The estimates of hours actually worked in the Labour Account differ from the LFS estimates due to scope adjustments (detailed later). There are additional differences, when comparing industry estimates of hours worked, that arise as a consequence of the time periods measured and the attribution of industry for secondary jobs.

The LFS measures industry of main job only in the middle month of each quarter. The Labour Account presents estimates which represent the entirety of the quarter. Consequently, the data used in the Labour Account has industry of main job imputed (based on longitudinal data) for the start and end months of a quarter. The three monthly estimates of hours actually worked in the reference week are then summed together to

derive estimates of hours worked across the quarter by industry divisions and subdivisions.

Similarly, estimates of hours worked in the LFS are attributed to industry on the basis of an employed person's industry of main job. The Labour Account is intended to measure hours worked in the industry of each job a person works. Consequently, hours worked in the Australian Labour Account is consistent with the LFS estimate of total hours worked in a year (plus scope adjustments) but reallocates hours worked across industry divisions and subdivisions to account for those hours worked in secondary jobs that are held in different industries.

There is no single source of information to determine the industry allocation of hours worked in secondary jobs. Estimates of hours worked in secondary jobs by industry of secondary job are determined by combining information from the Labour Force Survey (LFS), and the Linked Employer-Employee Dataset (LEED). The method used is detailed below:

1. Estimate total hours actually worked in the quarter by summing the hours actually worked in all jobs in the reference week from each month of the quarter
2. Apportion hours worked between main and secondary jobs based on LFS data.
3. Allocate hours worked in main jobs across industry based on LFS data.
4. Apportion hours worked in secondary jobs across industry based on LEED multiple-job holding data.

## Scope adjustments

Hours actually worked in all jobs derived from the Labour Force Survey are adjusted to align with the production and residency boundaries of the Australian System of National Accounts (ASNA) by including estimates of hours worked by children under 15 years of age, members of the permanent defence forces and non-residents employed by Australian resident enterprises, and excluding hours worked by Australian residents employed by non-resident enterprises. The estimated numbers of jobs held by people in each category are taken from the Jobs quadrant.

Estimates of the number of hours actually worked by non-residents living in Australia employed by Australian resident enterprises are estimated using data from the Survey of Education and Work about recent migrants combined with LFS data and estimates of the stock of non-residents present in Australia by visa type. The number of hours worked is estimated based:

- For non-resident students on the average hours worked by recent student migrants and is capped at twenty hours per week (a work condition of student visas).
- For sponsored visa holders on the average hours worked by resident non-students who

work full-time.

- For New Zealand citizens (444 visa holders) on the average hours worked by recent New Zealand migrants.
- For other non-residents on the average hours actually worked by recent non-student migrants.

Hours worked by child workers are derived based on data from the 2006 Survey of Child Workers. The hours actually worked are calculated by multiplying the estimate of jobs held by child workers (as described in the Jobs quadrant) by estimates of average hours worked by age cohort calculated from the Child Workers Survey. This method assumes that the average hours worked by children under 15 years remains constant through time.

Hours worked by permanent defence force personnel are estimated by multiplying the average hours worked by the civilian population by the count of permanent defence personnel.

Hours worked by the adjusted scope populations are allocated to industry as described in the table below.

Scope adjustment	Allocation to industry
Permanent defence force personnel	Hours are allocated to Defence (ANZSIC Subdivision 76) within Public Administration and Safety (ANZSIC Division O).
Australian residents working in Australia employed by non-resident enterprises	Hours are deducted from the Public Administration and Safety (ANZSIC Division O) industry, as most people in this category are locally engaged by foreign embassies, consulates etc.
Non-resident students	Hours are allocated using the same proportions as for main jobs held by non-resident students, i.e. based on the industries in which recent student migrants work (sourced from the Survey of Education and Work (SEW)).
Sponsored visa holders	Hours are allocated based on data published by the Department of Home Affairs on the industry of employment of 457 and 482 visa holders.
Working holiday visa holders	Hours are allocated based on data published by the Australian Tax Office on Working Holiday Makers.
Non-resident New Zealand citizens (444 visa holders)	Hours are allocated using the same proportions as for main jobs held by non-resident NZ citizens, i.e. based on the industries in which recent NZ migrants work (sourced from the Survey of Education and Work (SEW)).
Other non-residents	Hours are allocated using the same proportions as for main jobs held by other non-residents, i.e. based on the industries in which recent migrants (not previously covered) work (sourced from the Survey of Education and Work (SEW)).
Child workers under 15 years	Hours are allocated using the same proportions as for the estimates of jobs held by children, i.e. based on 15-year-old employed people from the LFS. Child workers under 15 years are assumed to hold only main jobs.

## Hours sought (or preferred) but not worked

Hours sought but not worked are estimated by aggregating hours sought by the unemployed and additional hours preferred by the underemployed. Hours sought by unemployed people are the hours unemployed people could work if they were employed. Additional hours preferred by underemployed people are the potential hours of employed people that are not fully utilised. They include hours that employed people want to and are available to work above their usual hours, as well as hours not worked in the survey reference week due to economic reasons (such as being stood down).

Both series are sourced from the Labour Force Survey. Input data from the Labour Force Survey are not available prior to 2014. For earlier time periods, an average hours sought estimate based on data from 2014 to 2017 is multiplied by the number of unemployed and underemployed people. Data are extrapolated to derive quarterly estimates from the Labour Force Survey reference week estimates.

It should be noted that industry estimates for the unemployed population (and therefore the hours sought by those unemployed people) are based on industry of last job worked (within the past two years) from the Labour Force Survey. This does not necessarily equate to the industries in which unemployed people are currently seeking work, nor do they include those who have never held a job previously. Similarly, it is assumed that any additional hours preferred by the underemployed are preferred in the same industry as the main job of each underemployed person. As such, care should be exercised when interpreting estimates of hours sought or additional hours preferred on an industry basis.

No adjustments have been made to align the Labour Force Survey hours sought with the ASNA residency and production boundaries, as there is no reliable information to derive estimates of additional hours of work sought non-residents nor children under 15. It is also implicitly assumed that defence force personnel are fully employed.

## **Available hours of labour supply**

Available hours of labour supply are the total number of hours for which people in the labour force are prepared to make themselves available for work. It is the sum of hours actually worked in all jobs, including adjustments for scope, and hours sought but not worked.

## **Hours paid for**

Total hours paid for, at both an industry and total economy level, is calculated by adding quarterly estimates of ordinary and overtime hours paid. In addition, ordinary time hours paid is calculated for Owner Managers of Unincorporated Enterprises (OMUEs) separately to other employed people.

### **Hours paid for – Employees and Owner Managers of Incorporated Enterprises**

In calculating hours paid for, for Employees and Owner Managers of Incorporated Enterprises, average weekly ordinary time hours paid and average weekly overtime hours paid for each industry are derived from underlying data from the EEH. To calculate both overtime and ordinary hours paid for, average weekly measures are multiplied by the number of filled jobs (less OMUEs) in each industry. The filled jobs data are taken from the Jobs quadrant, while the number of Owner Managers of Unincorporated Enterprises is

taken from the People quadrant. As the survey data reflects a 'typical week', quarterly estimates of total ordinary and overtime hours paid for are derived by multiplying the average weekly data by 13 weeks. Similar to the hours paid for, for Owner Managers of Unincorporated Enterprises, figures estimated at an industry level are summed to produce a 'whole of economy' total.

Prior to 2014, the two average weekly hours series for ordinary time hours paid and paid overtime were only available for non-managerial employees (refer to Labour Payments Concepts for a definition). From 2014, these series are available for all employees, which includes managerial employees. The all employees series are used in Australian Labour Account hours paid for estimates where available. To align the non-managerial employees with all employees for years prior to 2014, the movements of non-managerial employees is applied to the level of hours paid for all employees.

In addition, as the EEH is a biennial survey, average weekly hours paid data for years where EEH survey data are not available are linearly interpolated from the two neighbouring years. For example, average weekly hours paid data for 2013 are calculated as the midpoint of EEH data for 2012 and 2014. EEH data are also not available on the current industry classification basis prior to 2008. Data for earlier time periods have been estimated by matching current and historical industry classifications, as much as possible, at the industry subdivision level.

As Division A is out of scope of the Survey of Employee Earnings and Hours, the calculation of hours paid for the Agriculture Forestry and Fishing Industry (ANZSIC Division A) uses the average hours paid for Division I (Transport, Postal and Warehousing).

### **Hours paid for – Owner Managers of Unincorporated Enterprises**

For OMUEs, it is assumed that hours paid for are equivalent to the number of hours actually worked, as OMUEs would generally have no entitlement to any form of paid leave.

## **Hours quadrant calculations**

### **Hours quadrant sources and calculations**

